

## REMARKS

Claims 1-19 are rejected.

Claims 1, 3, 14 and 16 are amended.

Claim 2 has been canceled.

### Disclosure Objections

The Examiner objects to the disclosure on page 16 of the specification. Page 16 discloses that the results of Table 4 are shown in Figure 4. The Examiner states that Figure 4 appears to illustrate at least some of the results of Table 5 at a polymer dose of 110 mg/l. The Applicants have deleted Figure 4 on page 27 and amended the specification on page 16, first paragraph to delete the reference to Figure 4. Figure 4 does not contain any additional information beyond that contained in table 4 and is thus superfluous. Thus the disclosure objection is overcome.

### 35 U.S.C. 112, second paragraph

Examiner states that in claim 1 "the substrate" lacks clear antecedent basis. The Applicants have amended "substrate" to "suspension".

### 35 U.S.C. 103 (a) rejections

Claims 1-14 and 19 are rejected as being unpatentable over Sorensen et. al US 5,846,433 in view of McGrow et al. US 5,213,693.

In order to better define the instant invention, the Applicants have amended claim 1 by incorporating the limits of claim 2. Claim 2 is canceled. Claim 1 is further amended to replace the term "polymer" with the terms "polymeric flocculant". The use of "polymeric flocculant" is supported by examples 1-3. Claims 3, 14 and 16 have been amended to correct dependency on claim 1 rather than on claim 2. No new matter has been added.

The Examiner states it would be obvious to one skilled in the art to modify the process of Sorenson et al. by introducing the polymer solutions substantially simultaneously in view of the teachings of McGrow, to aid in flocculating suspended solids. The Examiner further states that the specific weight % and types of polymer solutions utilized, would have been an obvious matter of process optimization.

Sorenson et al. US '433 teaches a process of flocculating and dewatering an aqueous suspension by dosing into the suspension first a coagulant and then a flocculant. In clear contrast to this, the instant invention and amended claim 1 deal with a process of flocculating and dewatering an aqueous suspension by dosing into the suspension a concentrated solution of a polymeric flocculant and dilute solution of a polymeric flocculant. Moreover, the invention involves an inventive step because the process claimed exhibits advantages, which are shown in the examples.

As Sorenson expressly requires that a coagulant and a flocculant must be used, the teaching of the reference leads away from the instant inventive process in which no coagulant is used but two flocculant solutions of different concentrations.

Sorenson et. al US '433 sites the use of a coagulant suspension having a coagulant polymer content of 0.2 to 2% while the flocculant solutions may have a flocculant content of 0.03 to 0.5% by weight (see column 7, lines 63-66). In example 1 of Sorenson et. al, a coagulant is added as a 1% aqueous solution and the flocculant as a 0.1% aqueous solution to a sewage sludge suspension. The coagulant and flocculant are added consecutively not simultaneously as in the instant invention as admitted by the Examiner.

McGrow et. al US '693 disclose the addition of a preformed solution of coagulant and flocculant polymer to a suspension of organic solids which is flocculated and then dewatered by filtration on a filter press or belt press. According to McGrow, "Preferably, however, in the invention the flocculation is conducted by substantially simultaneously mixing into the suspension the cationic coagulant polymer as a preformed solution and the cationic flocculant polymer as a preformed solution, and most preferably as a single preformed solution containing both the cationic coagulant polymer and the cationic flocculant polymer." See column 3 lines, 20-26. The ratio of coagulant polymer to flocculant polymer in McGrow may range from 0.1 to 10 parts respectively. See claim 1 of McGrow. However, the one example of the McGrow application, presumably the best mode, shows a weight ratio of cationic flocculant polymer and cationic coagulant polymer of 1 to 1 in the premixed solution. This

certainly could not be considered dilute for one component and concentrated for the other as in the Applicants' invention.

Further, the McGow disclosure states in column 6, lines 3-7 that the blended particulate composition should be dissolved in water. The solution is usually allowed to stand to achieve *full dissolution* in McGow. Applicants' invention, in contrast, comprises concentrated and dilute aqueous solutions of cationic polymer wherein the two solutions exist as discrete components of the composition. See page 7, last paragraph of instant invention. Furthermore it is desirable that both the mixture of concentrated and dilute solutions exist together as a non-homogenous composition. "One way that undesirable mixing of the aqueous composition can be avoided is by ensuring that there are no mixing or pumping stages after the concentrated and dilute solutions have been combined" See pages 7-8 last sentence on page 7 continued onto first line of page 8. If as the Examiner suggests, one skilled in the art were to take the composition of McGow, a premixed homogeneous solution of coagulant and flocculant , and modify the process of Sorenson, consecutive addition of dilute and concentrated coagulant and flocculant, by introducing the polymer solutions substantially simultaneously, one would not achieve the same instant invention. The premixed solutions of McGow are not as described in the disclosure as "substantially discrete components". Nor is there any suggestion to add the two solutions in any other way except as fully dissolved solutions of coagulant and flocculant. Therefore, the 103(a) rejection of Sorenson in view of McGow is improper and the Applicant respectfully asks that the rejection be withdrawn.

Claims 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sorenson et al. in view of McGow et al as above, and further in view of Luetzelschwab US 4,402,916.

Claim 15 depends on claim 14, ultimately depending on claim 1. Amended claim 1 specifically points out that the "dilute solution and concentrated solution exist as substantially discrete components". Therefore, if one were to dilute the concentrated solutions of the instant invention as in the process of Luetzelschwab US '916, take the diluted concentrated solution and then premix to a homogeneous solution of coagulant and flocculant as in McGow and modify the process of Sorenson by introducing the polymer solutions substantially simultaneously, one would not arrive at the instant invention because the premixed solution of McGow is not made up of substantially discrete components. Therefore the 103(a) rejection of claims 15-18 as being unpatentable over Sorenson et al. in view of McGow et al as above, and further in view of Luetzelschwab US 4,402,916, is improper.

Reconsideration and withdrawal of the rejection of claims 1-19 is respectfully solicited in light of the remarks and amendments *supra*.

Since there are no other grounds of objection or rejection, passage of this application to issue with claims 1-19 is earnestly solicited.

Applicants submit that the present application is in condition for allowance. In the event that minor amendments will further prosecution, Applicants request that the examiner contact the undersigned representative.

Respectfully submitted,



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Enclosure: Petition for 1 month extension.